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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,118	07/24/2003	Kiyoshi Yoneda	YKI-0133	3918
23413	7590	11/17/2005	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			COLON, GERMAN	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,118

Applicant(s)

YONEDA ET AL.

Examiner

German Colón

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The Amendment, filed on August 25, 2005, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8-9 and 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 8 and 11, the claims recite the limitation of “each insulating film and each protrusion are formed through a two-step exposure process comprising a first exposure to light forming the thickness of said insulating film and a second exposure to light for removing the insulating film.”

First, while the claims recite that both the insulating film and the protrusions are to be formed by a double exposure, the limitations following said recitation only describe the process for forming the insulating film. It is unclear if the insulating film and the protrusions are made of a same material and each exposure results in the formation of both layers; or if the insulating film and the protrusions are made of different materials and the process described for the insulating film is repeated to form protrusions.

Second, the method claims a process for forming an OLED which comprises insulating films and protrusions. However, the last step of claims 8 and 11 is a second exposure for removing the insulating film. It is unclear whether the final product does not comprise an insulating film, or whether the second exposure is to remove only a portion of the insulating film.

Regarding claims 9 and 12, the same ambiguity is presented, but using a gray-tone exposure rather than a two-step exposure.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al. (US 6,768,257).

Yamada discloses a method of manufacturing an organic EL panel in which organic EL elements are arranged in a matrix (see Fig. 9), each organic EL comprising at least one organic emissive layer 11 (see Fig. 6) disposed between a pixel electrode 10 and an opposing electrode 12, wherein each pixel electrode has a size corresponding to an emissive region of one pixel, and wherein the opposing electrode is opposed to each pixel electrode and correspond to a plurality of pixels (see at least Fig. 6 and respective description), the manufacturing method comprising:

forming the pixel electrodes **10** (see Fig. 3C);

forming insulating films **13**, wherein each insulating film has a form of a frame that covers edges of each of the pixel electrodes (see center portion of Fig. 4);

forming protrusions **14** around each insulating film (see insulating film in central portion of Fig. 4 and rightmost and leftmost protrusion **14** in Fig. 4), wherein each protrusion has a thickness greater than that of the insulating film around which the protrusions surrounds, and

forming the organic emissive layer while the protrusions are supporting a mask (see Figs. 5A-5C).

6. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Nishio et al. (US 2003/0189400).

Nishio discloses a method of manufacturing an organic EL panel in which organic EL elements are arranged in a matrix (see Fig. 6), each organic EL comprising at least one organic emissive layer **20** (see Fig. 3B) disposed between a pixel electrode **12** and an opposing electrode **24**, wherein each pixel electrode has a size corresponding to an emissive region of one pixel, and wherein the opposing electrode is opposed to each pixel electrode and correspond to a plurality of pixels (see at least Fig. 6 and respective description), the manufacturing method comprising:

forming the pixel electrodes **12** (see Fig. 2A in view of Fig. 6);

forming insulating films **14**, wherein each insulating film has a form of a frame that covers edges of each of the pixel electrodes;

forming protrusions **30** around each insulating film, wherein each protrusion has a thickness greater than that of the insulating film around which the protrusions surrounds, and

forming the organic emissive layer while the protrusions are supporting a mask.

The Examiner notes that Fig. 6 suggests the insulating layers **14** having a thickness greater than that of the protrusions **30**. However, Nishio teaches that the protrusions may be formed directly on the substrate (see paragraph [0042], lines 13-15; and paragraph [0050]). Further, Nishio teaches that the protrusions should have a height sufficient to support the mask, while avoiding contact of the mask with the organic light-emitting area (see at least paragraph [0048]). Accordingly, since the protrusions are formed directly on the substrate, and do not allow the mask to be in contact with the organic element, Nishio provides for the protrusions to have a thickness greater than that of the insulating layers.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (US 6,768,257) or over Nishio et al. (US 2003/0189400) in view of Tang (US 5,937,272).

Yamada and/or Nishio disclose the claimed invention except for the limitation of forming the organic emissive layer by the protrusions supporting a donor sheet of organic emissive material, said organic emissive material being released by laser irradiation.

However, in the same field of endeavor, Tang discloses a method of manufacturing an organic EL device, wherein a donor sheet of organic emissive material is supported by

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protrusions, said organic emissive material being released by laser irradiation (see at least Figs. 4-6). Tang teaches this process to provide a high definition organic EL layer with excellent utilization of the organic material and excellent uniformity of the deposited layers (see at least Col. 2, lines 25-32). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the emissive layer by the method disclosed by Tang, in order to produce a high definition organic EL device with excellent uniformity of the deposited layers, while having excellent utilization of the organic material, which reduces manufacturing costs.

9. Claims 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. or Nishio et al. as applied to claims 7 and 10 above, and further in view of Duineveld et al. (US 6,891,327).

Referring to claims 8-9. Yamada and/or Nishio disclose the claimed invention except for the limitation of the insulating layer and the protrusions being formed by a two-step exposure or a gray-tone exposure.

However, Duineveld discloses a method of forming neighboring insulating layers or protrusions, and teaches the suitability of a two-step exposure or a gray-tone exposure, wherein the neighboring structures are made of a same material and then patterned, to reduce the numbers of steps in the formation of the device (see at least Col. 17, lines 10-14). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the exposure steps of Duineveld in the method of Yamada and/or Nishio, with the purpose of patterning different neighboring structures from a same material, in a reduced number of steps.

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Referring to claims 11-12, the claims are rejected over the reasons stated in the rejection of claims 8-9.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Urabe et al. (US 6,614,174) discloses a method of making an OLED comprising a protrusion which supports a mask.

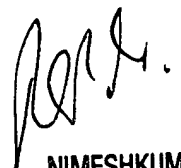
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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